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THE DIAND NORMAN WELLS SOCIO-ECONOMIC MONITORING PROGRAM

Report 9-84

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PREFACE

The Norman Wells Oilfield Expansion and Pipeline Project is the first major hydrocarbon development in the North. As such, it offers unique opportunities to observe at first hand the effects of a development project on the environment, the economy and the social fabric of the region. There have been a number of extensive public review processes dealing with major development project proposals e.g., the Berger Inquiry, and the Environmental Assessment Review Panel (EARP) on the Norman Wells Project itself, which have debated extensively the possible effects of such projects. There have, however, been relatively few opportunities to observe the effects at the time the project is in the construction phase, the time of most likely disruption in a region.

Accordingly, the Department of Indian Affairs and Northern Development mounted a monitoring program with the objective of identifying the impacts, negative and positive, of the Norman Wells Project as development proceeded. The four Mackenzie Valley communities closest to the project are Norman Wells itself, Fort Norman, Fort Simpson and Wrigley. Against the background of a database survey carried out in 1982 intended to provide the picture "before" the start of major construction, the DIAND Norman Wells Socio-Economic Impact Monitoring Program has developed a comprehensive battery of data on certain selected economic and social factors through the conduct of annual field surveys.

This program is, we believe, the first impact monitoring program of its kind, covering as it does the community situations "before", "during" and "after" project construction. The program is under the direction of Professor R.M. Bone of the University of Saskatchewan. Results are being presented in a series of technical reports pertaining to each year for which the survey has been carried out. The present report is designed to provide a comprehensive picture of the program findings from 1982 through 1984. A full list of published reports is presented in the Bibliography.

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MACKENZIE RIVER BASIN, 1981

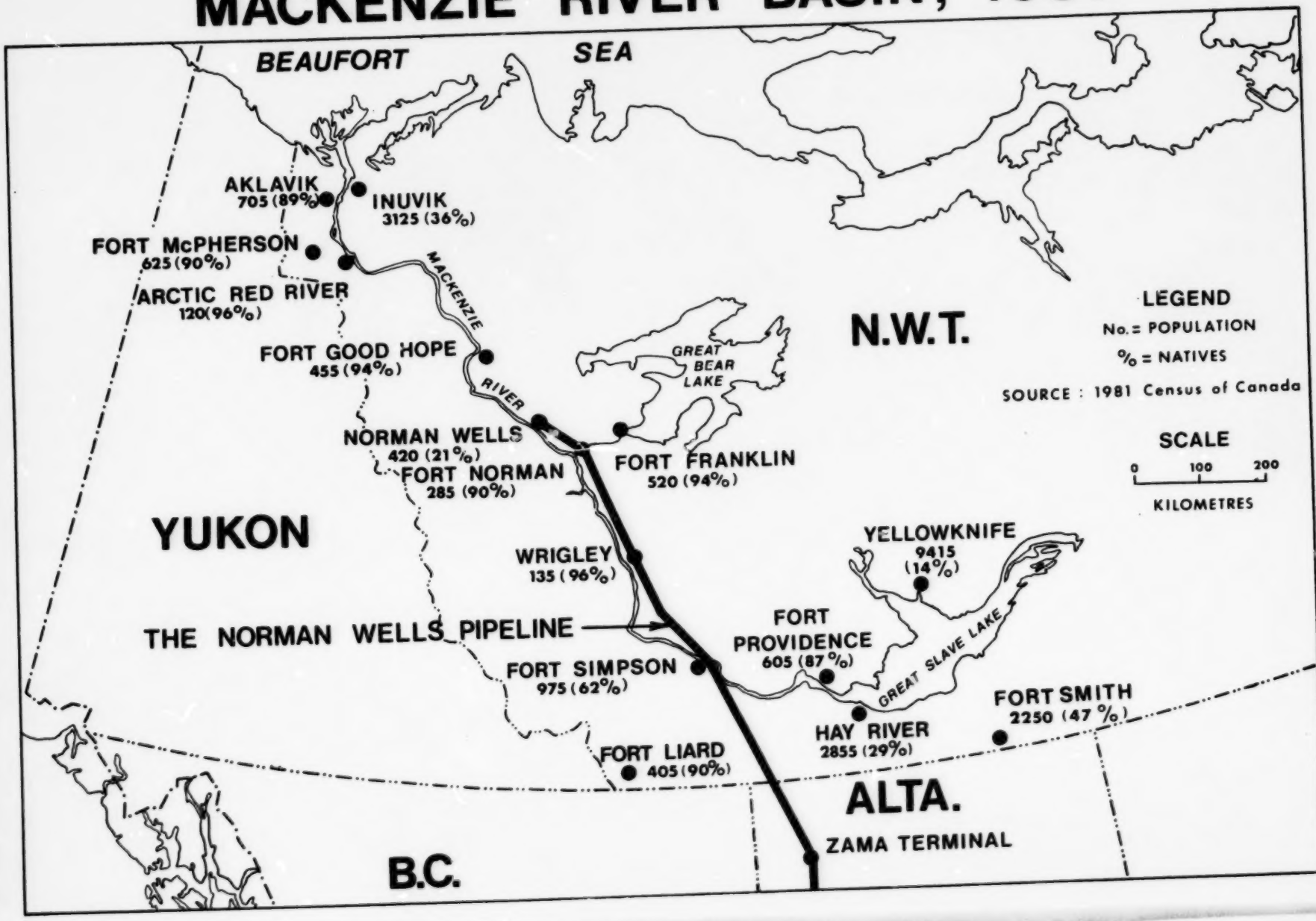

Figure 1

THE DIAND MONITORING PROGRAM: A THREE YEAR REVIEW

SUMMARY

This report contains the major findings of the DIAND socio-economic monitoring program of the Norman Wells Oilfield Expansion and Pipeline Construction Project (Norman Wells Project) for the period June 1982 to June 30th, 1984. The four communities of Norman Wells, Fort Norman, Wrigley and Fort Simpson provide the geographic focus of this study. These settlements are located in the construction zone of the Norman Wells Project.

The objective of the monitoring program is to measure annual socio-economic changes in each of the four communities over a five-year period (1982 to 1986). This time span represents three stages in development - the pre-construction, the construction and the post-construction stages.

The main findings in this summary report are based on field survey work undertaken in the communities from 1982 to 1984 and on previously published DIAND monitoring reports. There is a gap in the 1984 data because the survey team was not able to complete its work in Fort Simpson and Wrigley. Most of the field survey work consisted of a census-like enumeration of each community. The core of this field work was two questionnaires - one administered to heads of households, the other to owners/managers of private businesses and public agencies. These questionnaires were designed so that impacts upon native people could be distinguished from those on the general population, permitting a more detailed analysis of the effects of the Norman Wells Project on northern people.

The direct impact of this project occurred mainly at the site of the oilfield expansion, and to a lesser degree, along the route of the pipeline construction. During the entire three years covered by this report (July 1981 to June 1984), most construction work was associated with the expansion of the oil field at Norman Wells. The first winter of pipeline construction took place over a very short period of time (January to March 1984). Thus, the three communities of Fort Norman, Wrigley and Fort Simpson have been less exposed to the direct socio-economic impacts of the Norman Wells Project than has the community of Norman Wells.

Norman Wells residents and businesses have had a long association with the oil industry. This experience with a large-scale industrial development and its associated wage economy allowed the residents of Norman Wells to cope with the hectic construction period and to

respond to the new economic opportunities. Residents of the other three communities, but particularly Fort Norman and Wrigley, have had much less exposure to the industrial economy and hence were less prepared for the Norman Wells Project. In this sense, the business community in Norman Wells was better able to take advantage of the economic opportunities presented by the Project, and its permanent residents were more able to shield themselves from the social costs than those in the other three communities.

The major findings of this study, covering the period June 1982 to June 30th, 1984, are presented in order of their appearance in this report. The major findings are:

(1) Most of the socio-economic impacts occurred at Norman Wells. Its firms received 81% of the $53 million in project contracts going to local firms in the four communities.

(2) Virtually all of the population increase in the construction period occurred in Norman Wells. The population of this community increased from 420 in 1981 to 630 in 1984. In addition to these permanent residents, as many as 1000 temporary (rotational) workers lived in the work camps in and around Norman Wells at critical work periods. The two pipeline work camps located near Fort Norman and Fort Simpson each had a capacity of 450. These camps were open for some 90 days beginning in January 1984.

(3) Native workers obtained approximately 20% of the jobs created at Norman Wells.

(4) Average household incomes at Fort Norman increased more rapidly between 1982 and 1984 than they did at Norman Wells, and the income gap between Norman Wells and Fort Norman diminished from $17,000 in 1982 to $7,000 in 1984.

(5) Norman Wells residents are now spending more of their income in that community while the opposite is true for residents of Fort Norman.

(6) Up to 1983, the number of active trappers had declined at Norman Wells but remained relatively constant at Fort Simpson, Wrigley and Fort Norman. The trend over the last 10 years shows a general increase in the number of trappers and fur sales in these three communities.

(7) Consumption of country food remains unchanged - being very high in the native communities, somewhat lower in Fort Simpson, and much lower in Norman Wells.

(8) The concept of joint venture firms (i.e., companies formed by native groups and southern corporations) is now viewed more favourably by residents in Norman Wells and Fort Norman. In 1984, 69% of the households in Norman Wells favoured joint venture firms compared to 53% in 1982; at Fort Norman, the figures are 78% in 1982 and 90% in 1984.

(9) At Norman Wells, the percentage of residents favouring large-scale industrial projects has increased from 45% in 1982 to 69% in 1984; at Fort Norman, the figures are 83% in 1982 and 93% in 1984.

(10) Most respondents to a 1984 sample survey mentioned more negative socio-economic impacts upon their community than positive ones. Positive impacts were related to economic benefits while many negative ones were associated with social costs. The most commonly stated negative impact was that there were not enough jobs and training from the Norman Wells Project, while its positive counterpart was that jobs, training and economic benefits were the most important benefit provided by the Norman Wells Project.

The Norman Wells Project is now well past its mid-point and four general observations are:

(1) The Norman Wells Project has stimulated the economy of Norman Wells and, to a lesser degree, the economies of the other three communities in the construction zone, thereby generating many new jobs and businesses.

(2) The feared adverse social impacts arising from a large in-migration has been contained within acceptable limits at Norman Wells. At Fort Simpson, Wrigley and Fort Norman, pressure on community resources and services from population increases did not occur. Also, since few southerners moved to these three communities during the construction period, there was no change in the native/non-native ratio. At Norman Wells, however, there was a large in-flow of people, most of whom were non-natives.

(3) A significant number of native people in the four communities expressed disappointment at the number of economic benefits obtained by native people, while others voiced their strong disapproval of any development until land claims are settled.

(4) Native development corporations and small private firms took part in the construction work and at least one local corporation, Tulita Developments Ltd., profited from the contracts.

In the coming year, the four communities face a different challenge - an adjustment to a much slower economy. This adjustment may not be an easy one. An economic "let down" could represent a major hardship for the people of this region and for some of the fledgling businesses, particularly the new native corporations which sprang up in response to the Norman Wells Project.

THE DIAND MONITORING PROGRAM: A THREE YEAR REVIEW

1. PROJECT BACKGROUND

The Norman Wells Oilfield Expansion and Pipeline Project (Norman Wells Project) is a major industrial development in northern Canada. Its purpose is to increase oil production from the Norman Wells petroleum deposit and to export this surplus to southern Canadian markets via a buried pipeline. Esso Resources Canada Ltd. (Esso) planned on expanding production and it arranged to have Interprovincial Pipelines (IPL) build the pipeline from Norman Wells to Zama, Alberta. Esso and IPL then approached the Department of Indian Affairs and Northern Development (DIAND) for permission to proceed with their Norman Wells Oilfield Expansion and Pipeline Project, while IPL applied to the National Energy Board (NEB) for a certificate to construct and operate the proposed pipeline. DIAND referred the proposal to the Federal Environmental Assessment Review Office (FEARO) for a formal review, while the NEB conducted its own inquiry.

Both review agencies approved the Norman Wells Proposal with certain reservations. FEARO concluded that this project would provide a needed economic stimulus to the Mackenzie Valley but that major deficiencies in the proponents' planning and in the preparedness of the GNWT and the federal government needed to be rectified before the potential negative impacts could be sufficiently controlled (FEARO, pp. 3-4). Similarly, the NEB Board concluded that "As to regional socio-economic desirability, the Board finds that the proposed pipeline project may not provide the region with a net positive benefit but rather that its modest potential benefits and modest potential liabilities would balance out, at least in the short-term" (NEB, 1981, p. 172). The Board further stated that, in its opinion, irrespective of the actual level of negative impacts, most would fall on the native people residing in the impact area, the people least equipped to participate in the positive impacts of the project (NEB, p. 126).

Both the FEARO and NEB reports discussed the problem of ensuring a high participation in the Norman Wells Project by native people while protecting them from its adverse effects. According to IPL's consultant, Resources Management Consultants, the larger, more acculturated communities of Norman Wells and Fort Simpson have had previous experience with industrial development opportunities and therefore are more capable of adapting to the social impacts than the smaller, more isolated centers of Fort Norman and Wrigley. (NEB, p. 10). Any discussion of the social and political readiness of communities to participate in a major industrial project

should recognize two facts: (1) the rapid pace of modernization faced by native peoples over the past 20 years or so, and (2) the matter of their land claims. Both subjects are examined thoroughly in the report of the Mackenzie Valley Pipeline Inquiry and in more recent papers (Abele and Dickerson; Bone and Green; Brody; Dacks; Fumoleau; Hamelin; Finkler; Stabler; Strong; Usher; and Watkins).

A recent statement by the President of the Dene Nation at the December 1984 meeting of the Norman Wells Project Coordination Committee sums up their view of the Norman Wells Project: "Some of our communities have succeeded in obtaining some limited economic benefits from the project, others have not. But virtually all our people are concerned about the effects on them, their communities, their children's choices and the land they depend on."

2. FEDERAL APPROVAL OF THE NORMAN WELLS PROJECT

In its approval of the Norman Wells Project, announced July 30th, 1981, the federal government endorsed the recommendations of the EARP panel, including a delay in the commencement of the Norman Wells Project. Ottawa also gave approval in principle for incremental funding to a maximum of $21.4 million to help Northerners deal with the expected opportunities and any adverse consequences of the Norman Wells construction work. The federal government allocated approximately a third of these funds to the Dene Nation and the Métis Association of the NWT to provide programs for the native people in the impact area.

As a condition of final regulatory approval, the federal government insisted that Esso and IPL document their plans to maximize economic benefits to Northerners and to ensure that negative impacts were reduced to acceptable levels. These plans, called Socio-Economic Action Plans, formed a key part of a written agreement between the Minister of DIAND and the two companies.

3. THE PURPOSE OF DIAND'S MONITORING PROGRAM

In early 1982, the Department of Indian Affairs and Northern Development decided that it needed statistical data and information on the effects of the Norman Wells Project on four communities located along the pipeline route, namely Norman Wells, Fort Norman, Wrigley and Fort Simpson. The data would distinguish between natives and non-natives, thereby allowing the distribution of benefits and costs from the Norman Wells Project to be determined along the lines recommended by both

the FEARO and the JEB reports. The monitoring program would contain three major stages - pre-construction, construction and post-construction (see Figure 2).

DATABASE – MONITORING SYSTEM

THE PURPOSE OF SURVEY ONE IS TO CREATE A DATABASE OF KEY ELEMENTS SUBJECT TO IMPACT BY THE PROPOSED NORMAN WELLS PROJECT

THE PURPOSE OF SURVEY TWO IS TO DETERMINE CHANGES IN THE DATABASE

THE PURPOSE OF THE MONITORING REPORT IS TO ACCOUNT FOR THESE CHANGES, AND TO REPORT ON THEIR IMPACT UPON THE FOUR COMMUNITIES

Figure 2

Community support has been sought for the annual survey work. This support is normally gained by meeting with the community and band councils. Since one of the purposes of the data gathering is to present useful information to these local councils for their use in community planning and development, these meetings usually include the survey team reporting to the community and receiving their comments on local information needs. The 1984 survey work at Fort Simpson and Wrigley did not take place because the two bands did not want this work continued.

Data were collected on: (1) population size, (2) population characteristics, (3) northern residency (4) labour force change, (5) household incomes (6) local shopping patterns, (7) trapping and consumption of country food, (8) perceptions about development and (9) perceived positive and negative impacts on local communities.

The information has been gathered each year by means of community surveys, beginning in June 1982. Data are collected for the past 12 months from June to July 1. These surveys consist of a household questionnaire and a business/public agency questionnaire. Secondary information is also collected, including GNWT statistics from the departments of Social Services and Renewable Resources. Finally, a selected number of unstructured interviews are conducted each year.

The responses of the residents to the questionnaires are stored by community in the 360 computer at the University of Saskatchewan. This means that a wide variety of factual information can be prepared for each community. For example, the length of residency in the community or the NWT for native and non-native residents can be derived from the DIAND computer-stored data. Such an analysis of questionnaire responses can be used to determine just who obtained the most benefits - newcomers or long-term residents, natives or non-natives. Further information about the database and its organization can be obtained from two 1983 reports (Business and Household Survey Computer Code Book, 5-83, and Monitoring the Socio-Economic Impacts of the Norman Wells Project, 3-83).

By 1984, all four communities had felt the impact of either oil field development or pipeline construction. Accordingly, the 1984 household and business questionnaires contained impact questions. In addition, a new questionnaire was added which was aimed entirely at impacts upon the community and the families in these centres.

4. INITIAL FINDINGS TO JUNE 1983

Initial results are found in a series of reports based on the data contained in the 1982 and 1983 business and public services questionnaires. The major findings up to July 1983.

(1) virtually all construction activities associated with the Norman Wells Project occurred at Norman Wells;
(2) pre-pipeline preparations, such as right-of-way clearing, involved firms and workers from Fort Norman, Wrigley and Fort Simpson. However, this work was not sufficiently large to be detected in our 1982 and 1983 employment totals for these communities;
(3) from 1981 to 1983, while there was a six-fold increase in the labour force at Norman Wells, no change was registered in the other three centres;
(4) the proportion of natives in the labour force at Norman Wells increased from 16% in 1982 to 21% in 1983.
(5) the rotational work system proved to be an effective mechanism for involving native workers from communities surrounding Norman Wells.

5. MAJOR FINDINGS TO JUNE 1984

The major findings of the DIAND socio-economic impact monitoring program are found in the technical reports listed in the bibliography to this report. These monitoring results are based on field data collected in the summers of 1982, 1983 and 1984. In places, these data are supplemented by information from the 1981 Census and from GNWT administrative records (see report 6-84).

In this report, brief accounts of major findings are arranged in the following subject areas: (1) population size, (2) population characteristics, (3) northern residency, (4) labour force change, (5) household incomes (6) local shopping patterns, (7) trapping and consumption of country food, (8) perceptions about development, and (9) perceived positive and negative impacts on local communities.

1. Population Size

Since rapid population increases are normally associated with large-scale industrial projects in remote areas, the impact of large numbers of southern workers upon community services was one of the major social concerns discussed in the FEARO report (pp. 56 and 78). Much of this concern was based on the experience of Alaska where a large population increase took place in towns and villages along the construction route of the Trans-Alaskan Pipeline. Strong (pp. 45-53) states that perhaps

60% of the work force came from outside Alaska and that this population influx placed great pressure on public services, community resources and native society.

In the case of the Norman Wells Project, the only project related population growth occurred at Norman Wells where the number of permanent residents increased from 420 in 1981 to 630 by 1984 (see Figure 3).

Due to oilfield expansion work and its indirect spin-offs, Fort Norman's population was constant - 286 in 1981 and 288 in 1984. Exact figures are not available for Fort Simpson and Wrigley. Without the use of a rotational work force and self-contained work camps, the population of Norman Wells might well have exceeded 1000 at the height of the construction work. Also, Fort Norman and Fort Simpson would have received considerable population impact during the two short pipe-building seasons. Instead, pressure on public services and community resources from these temporary residents was greatly curtailed.

During the period 1982 to June 1984, the number of rotational workers (air commuters) varied according to the tempo of the construction work at Norman Wells. The capacity of the work camps at Norman Wells was nearly 1200 (Bone, Interim Report, 1982, p. 8). According to Esso's Social-Economic Action Plans, the population peak of some 1300 to 1400 was to occur at Norman Wells in the summer of 1984. This estimated figure included a permanent population of about 600 and a temporary one of between 700 and 800. In fact, this predicted peak occurred in the summer of 1983 because work on the Norman Wells Project was well ahead of schedule.

The two pipeline camps located near Fort Norman and Fort Simpson each had a capacity of 450. While these two camps were opened for about 90 days (January to March 1984), they were full only during welding operations which lasted for less than 30 days.

The rate of population growth for the four communities has varied over the past five years. An examination of this topic is the subject of a future report. However, a brief discussion of the impact of population changes upon community infrastructure at Norman Wells is presented below.

The effect of rapid population growth on Norman Wells and its infrastructure is considerable. Since Norman Wells was the only centre in the Mackenzie Valley experiencing a large population increase related to the construction project, its various public and retail services were subject to considerable

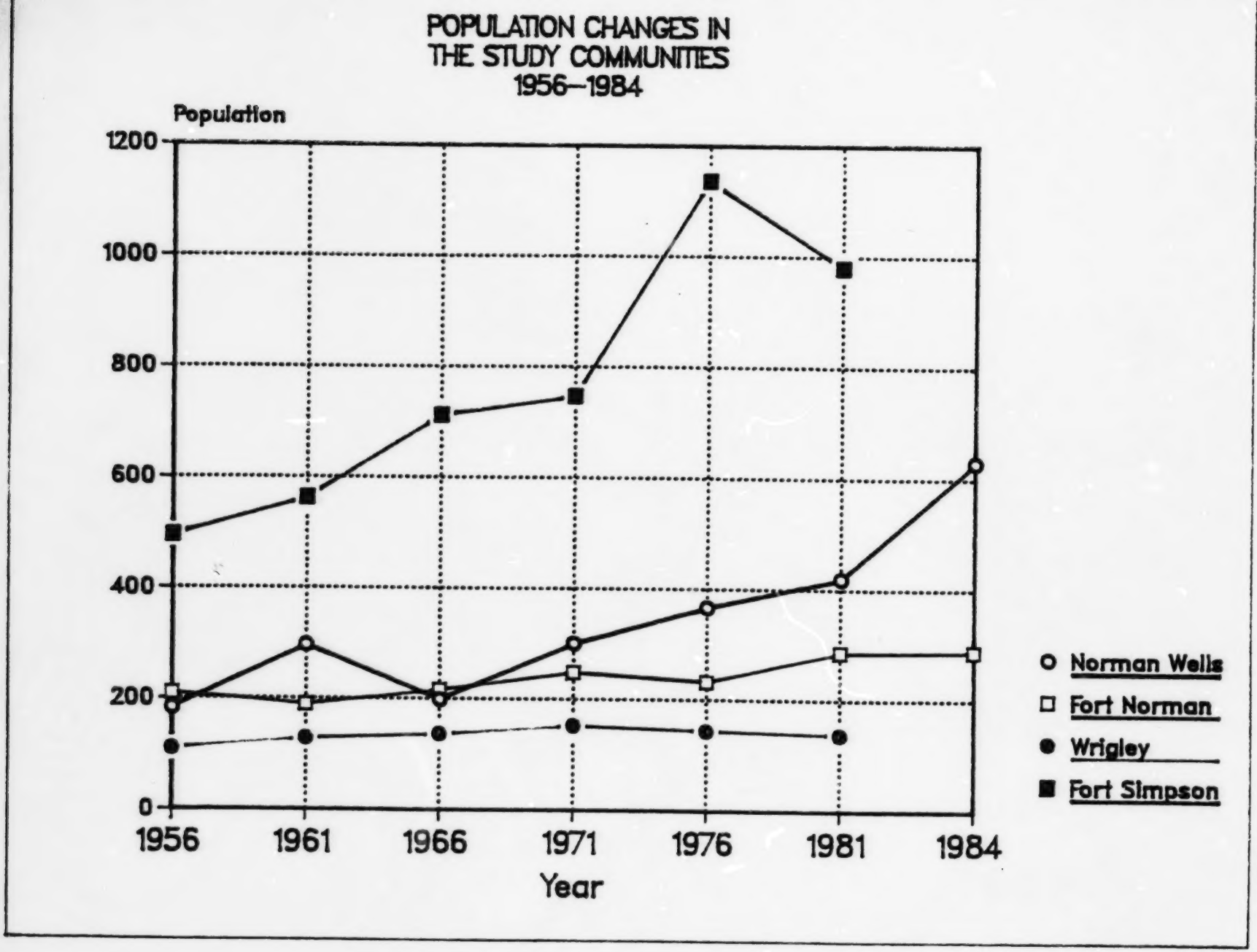
POPULATION CHANGES IN
THE STUDY COMMUNITIES
1956–1984
Population
1200
1000
800
600
400
200
0
1956
1961
1966
1971
1976
1981
1984
Year
Norman Wells
Fort Norman
Wrigley
Fort Simpson

Figure 3

pressure. The increased demand resulted in a general increase in the tempo of community life and, in the view of most long-term residents, lowered the quality of "small town life" (Report 3-84). Results of the 1984 survey indicate that pressures on community resources and services were felt most acutely on the hamlet's street system, housing stock, serviced lots, telephone system, school recreation facility, post office, liquor store and retail services. On the other hand, the community's infrastructure grew rapidly during the Norman Wells Project - a new school with a modern gym was built; housing and commercial store construction was very active; and the road system was extended.

One indicator of population pressure on a community is an increase in the average number of persons per household. Such an increase may indicate a housing shortage and crowded living conditions. While an average of 5 persons per household seems like a relatively small number of persons in a dwelling, the figure is an average, suggesting that some households have many more persons. A rough guide to interpretation of these averages is: (1) little or no housing pressure is indicated by a ratio of less than 3 persons per household; (2) some crowding and housing shortage is indicated by 3 to 4 persons per household; and (3) considerable crowding and pressure for new dwellings is revealed by a figure of 4 or more persons per household. While the results below need to be examined in terms of other factors, such as house size, these ratios provide a measure of population/housing change by community. For example, a sharp rise in this ratio would indicate that a community was not able to provide housing for the increase in its population.

In 1981, Norman Wells had 3.1 persons per household. In spite of a large population increase between 1981 and 1984, the average number of persons per household rose only to 3.2. The explanation is that the construction rate of new dwellings was almost equal to the rate of the population increase. Since no public housing funds have been allocated to Norman Wells for the past five years, all of the new homes are privately owned. For comparison purposes, the figures for Fort Norman are 4.0 persons per household in 1981 and 4.5 persons in 1984.

2. Population Characteristics

One of the main fears expressed by native intervenors at the EARP hearings was the effects on the native society of an increase in numbers of non-native residents (FEARO, p. 59). In 1981, the native population formed 78% of the population in the four communities; by 1984, it is estimated to have declined to about 75%.

Figures on the ethnic composition indicate that virtually all the increase in non-native population took place at Norman Wells. The DIAND survey shows that from 1982 to 1984 the non-native population at Norman Wells increased from 81.3% of the population to 85.4%. These figures reveal that more non-native people moved to Norman Wells than native people. Two possible explanations are: (1) that the availability of the Esso rotational work system permitted native workers to participate in the wage economy and yet remain in a native community, and (2) that many of the small business opportunities attracted non-native businessmen and women.

A detailed analysis of changes in the native/non-native ratios and their age/sex structure for each of the four populations is under way. For Norman Wells and Fort Norman, comparisons are made between the pre-construction period (1981) and the mid-point in the construction period (1984). The completion date for this report is September 1985. A few preliminary results from its initial findings are presented below.

The age/sex structure of Norman Wells has changed between 1982 and 1984. By demographic standards, two changes are significant. These are: (1) an increase in the percentage of males from 51.8% to 54.7% and (2) an increase in the number of children from 28.5% to 35%. The increase in the proportion of males is consistent with populations of resource towns, but the increase in children under 15 years of age was not expected. It is a reflection of type of migrant to Norman Wells - a large number brought their families with them. This situation no doubt placed some pressure on the local school system and recreation facilities.

3. Northern Residency

The issue of northern residency coloured many of the social concerns expressed at the FEARO hearings. Since several interventions at these hearings stressed the need to hire local residents first and southern workers second, the question of defining a Northerner received much attention (FEARO, p. 54). The EARP Panel concluded that the GNWT definition of a northern resident as any person that has resided in the NWT for one year or more is appropriate (FEARO, p. 54). Such a definition offers no special advantage to long-term residents, most of whom are of native ancestry.

The distribution of jobs and contracts from the Norman Wells Project to Northerners is a key element of the DIAND monitoring program. Information on birthplace and length of residency of residents in the four communities was collected in the household questionnaire. This allows the information on jobs

and contracts to be allocated to any definition of Northerner. Also, all other data collected in the household questionnaire can be sorted in this fashion. Some results are presented below.

The issue of who is a Northerner is partially answered by two personal events - place of birth and length of residency in a place or region. In the four communities, there are two distinct residence patterns exhibited by native and non-native Northerners. The vast majority of the native people in the four communities have been born and raised in the North. With few exceptions, most of them have spent their entire life in the Northwest Territories. On the other hand, the non-native population is often classified as "newcomers". While a few non-natives have lived their entire life in the North, most were born and raised in southern Canada or in another country. For example, in 1982, only 6% of the male heads of households interviewed in Norman Wells declared that they were born in the Northwest Territories, while in Wrigley the figure was 100%, i.e., all male heads of household were born in the Northwest Territories. (See Figure 4). Similarly, the length of residency of the respondents to the 1982 questionnaire varied by community with 91% in Norman Wells having lived in this community for ten or less years; at the other extreme, only 5% of the respondents at Wrigley have lived in this community for ten or less years.

In spite of the large in-migration to Norman Wells from 1982 to 1984, the proportion of persons born in the North did not change significantly. In 1982, those born in the NWT formed 18.7% of the population while in 1984, it was only 18%. These figures demonstrate that the net in-migration to Norman Wells occurred at rate of approximately four southerners for each Northerner.

In response to the question "if you have moved to this community in the last five years, why did you move to Norman Wells?", 73% were attracted by the prospect of "high wages". On the other hand, the percentage of surveyed households in Norman Wells with one or more members planning on leaving Norman Wells in the next year (1985) is 20% with another 8% "thinking about it". Approximately 75% of these people are planning on moving "south", particularly to Alberta. These kinds of responses suggest that after the construction work is completed, there will be a net out-migration from Norman Wells - unless there is other work.

Birthplace of Male Head of Household, 1982

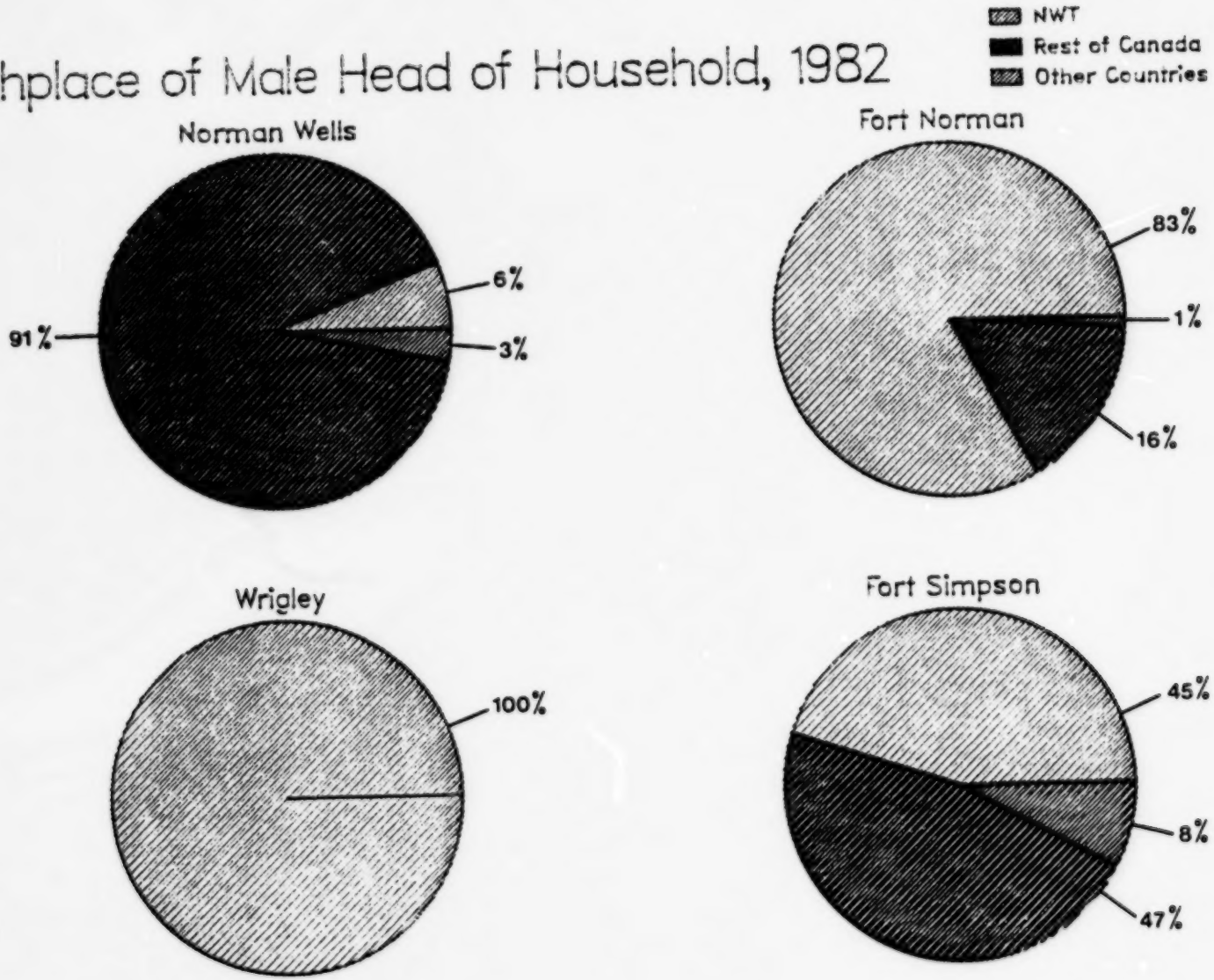

Figure 4

4. Labour Force Change

Northern employment was a critical issue at the EARP hearings. However, the FEARO report did not provide a target figure, e.g., 25% of all workers must be northern residents who have lived in the Northwest Territories for at least one year, nor did it report on the current employment levels of native people in the industrial sectors of the Northwest Territories, (cf., a 1981 report by the Department of Energy, Mines and Resources, in which it is stated that only 6% of the NWT workforce in the mining sector was native, EMR, 1981, p. 88).

Esso and IPL did address the subject of northern employment in their Socio-Economic Action Plan reports. Following an analysis of TERIS* data and their own needs, Esso estimated that "Northerners" could make up 22% (122) of the construction workforce and 60% (86) of the operations workers during construction (Esso, Socio-Economic Action Plans, section 040-003, pp 4-5). IPL estimated that Northerners could supply 29% of its pipeline and fieldgate construction employees and 35% (21) of its operations/maintenance workers during construction (IPL, Socio-Economic Action Plan section 4, p. 12).

IPL stressed in its action plan that the key to employing Northerners was through local firms which obtain contracts to undertake pipeline related work (not mainline construction). By June 30th, 1984, IPL reported in its monitoring report (p. 55) that over $20 million in contracts had been let to firms in Norman Wells ($9.9 million), Fort Simpson ($5.8 million), Fort Norman ($3.3 million) and Wrigley ($1.6 million). Esso had awarded some $30 million in contracts to firms in Norman Wells; none were issued to firms at Fort Norman, Wrigley or Fort Simpson. While IPL and Esso figures do not allow a breakdown by native and non-native firms, it is estimated that less than one-third of these contracts went to native firms in these four communities.

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*TERIS - Territorial Employment Record and Information System, a computerized labour force inventory developed by GNWT.

By June 1983, the Norman Wells Project had directly and indirectly generated over 1000 new jobs at Norman Wells. By June 1984, this figure had increased to nearly 1300. A measure of the impact of this project upon local labour force is that in June 1984, 59% of the households in Norman Wells preported at least one member working of this project for some time during the past three years. Another measure of its impact is the substantial increase in household incomes at both Norman Wells and Fort Norman. For example, from June 1984, the average (median) value of household income increased by $6000 at Norman Wells and $14,500 at Fort Norman.

In the first phase of the Norman Wells Project, almost all of the construction activity focussed on oilfield development at and near Norman Wells. For this reason, the impact upon local labour forces was limited to the one at Norman Wells. In the second phase, pipeline construction took place and this work attracted a number of workers from Fort Norman, Wrigley and Fort Simpson.

A summary of the effects of the first phase of the Norman Wells Project upon the employment patterns to June 1983 is based largely on Report 4-84. These effect are:

(1) The Norman Wells Project generated more than 1,000 jobs at Norman Wells.

(2) Over a third of these jobs went to Northerners.

(3) Approximately one-fifth of these jobs went to natives.

(4) About half of the rotational workers came from communities in the Northwest Territories.

(5) Nearly one-fifth of the northern rotational workers live in Fort Simpson, Fort Norman and Wrigley.

5. Household Incomes

The Norman Wells Project has had a decided impact upon incomes. Based on a comparison of income data by households in 1982 and 1984, there has been a general rise in average incomes in both Norman Wells and Fort Norman, but the rate of increase was especially high at Fort Norman. No data are available for 1984 for Wrigley and Fort Simpson.

Wages earned on the Norman Wells Project were high because of the long hours and the opportunity for extensive overtime pay. Most rotational workers had 10 to 12 hour shifts for up to 28 days while employees of local contractors often worked similar

hours. As a result, it is not surprising that incomes rose sharply during the booming construction period. For example, at Norman Wells household incomes increased from a median value of $38,000 per year in 1982 to $44,000 per year in 1984 (see Figure 5). (The median income figure of $38,000 means that half of the households had incomes below $38,000 and half above.)

In Fort Norman, average incomes increased even more dramatically - from $21,000 in 1982 to $35,500 in 1984. This rapid increase caused the income gap between Norman Wells and Fort Norman to narrow - from $17,000 in 1982 to $7,000 in 1984. These income changes indicate the powerful impact of the Norman Wells Project upon the economic well-being of the residents in a native community. Since these high incomes are expected to decline sharply when the Norman Wells Project is completed, the anticipated drop in household incomes may prove to be one of the major negative effects associated with this project.

6. Local Shopping Patterns

The shopping behaviour of consumers in the four communities has two major similarities. First of all, most shopping is done in the local community. Secondly, the more expensive items, like automobiles, are purchased in larger communities, such as Hay River and Edmonton. This spending pattern, necessitated by the small and somewhat limited number and variety of retail businesses in these four communities, results in a good deal of the wages earned in these communities being spent on goods and services found in larger towns and cities. This "leakage" of income to other urban centes reduces the secondary effects of the Norman Wells Project on the local communities. The term "secondary effects" refers to the circulation of money within a community, i.e., the capital investment into the Norman Wells Project resulted in much local employment; the wages earned are monies brought into the community from the south; these funds are then spent or saved; local residents either spend their earnings locally or externally; it is the money spent locally that generates further employment and creates a need for more retail services. The term "leakage" refers to locally earned wages, profits, transfer payments, and interest that is spent purchasing goods and services in other places.

In 1982, Norman Wells exhibited the typical characteristics of a small community where a relatively high proportion of its residents spent money outside of the community. By 1984, the spending patterns indicated a slight shift towards the spending of more money in Norman Wells. This fact reflects the increase in the number and variety of retail stores in Norman Wells.

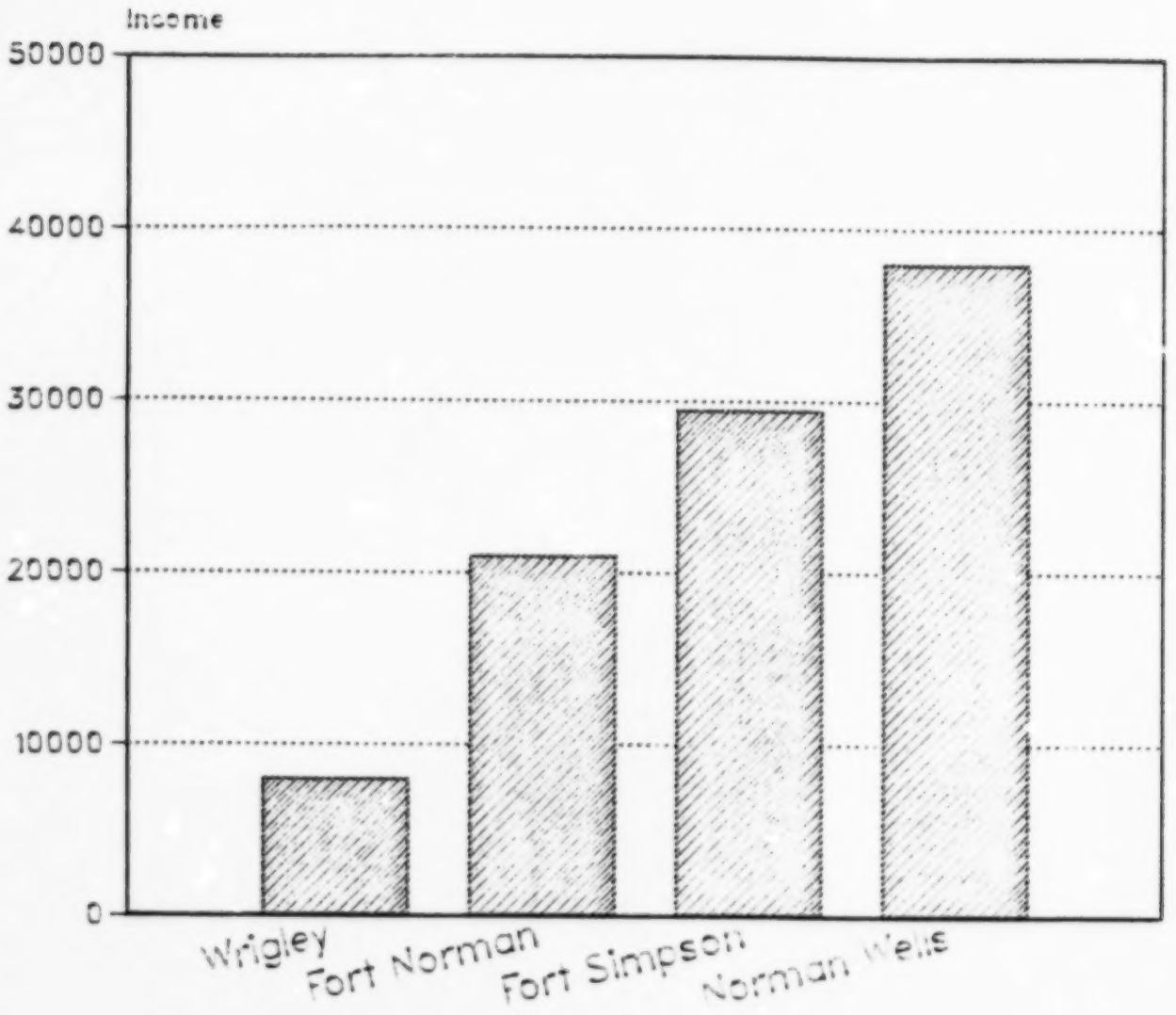
Median Household Income, 1982
Income
50000
40000
30000
20000
10000
0
Wrigley
Fort Norman
Fort Simpson
Norman Wells

Figure 5

In 1982, the spending patterns of Fort Norman residents were typical of low income households, namely most of the goods and services were purchased locally and few of these items were major purchases. For example, 75% of the households purchased three quarters or more of their goods in Fort Norman. Furthermore, few persons bought goods outside of their community; only 10% purchased some goods in Edmonton and only 30% in Yellowknife.

By 1984, the pattern of consumer spending had changed at Fort Norman. In general, more families were buying their goods outside of Fort Norman, i.e., only 40% of the households buying 76% or more of their goods at Fort Norman; by 1984, the number of consumers in this category had nearly doubled to 75%. Also, the number of persons shopping in Edmonton and Yellowknife increased sharply. This remarkable shift is explained by the much higher incomes which allow the residents of Fort Norman to buy more expensive goods and these goods are generally not available at the Hudson's Bay store in Fort Norman.

The pattern of consumer shopping in Norman Wells did show an important change between 1982 and 1984. Basically, more consumer dollars were being spent in this community. This means that secondary effects of the Norman Wells Project are becoming more powerful. For example, in 1982, only 3% of the consumers in Norman Wells spent 76% or more of their dollars in local retail stores. By 1984, the number of consumers in this category had doubled to 16.7%. The main reason for this increase is likely due to the expansion of the number and variety of retail services in Norman Wells. The fact that more and more people are spending their income in Norman Wells supports the small business community. Besides the increase in the proportion of household dollars spent in Norman Wells, the actual number of dollars spent has increased significantly because of increases in population and in household incomes. As well, some rotational workers probably purchased goods in Norman Wells, particularly native workers who were returning to home communities having very limited shopping facilities.

7. Trapping and Consumption of Country Food

Renewable resources have long provided the foundation for the traditional native economy. In the NEB report (p. 115), this Dene/land relationship was expressed by Chiefs from Mackenzie Valley communities as "... the land had to be protected since it was 'their bank' and ensured their survival." While the trapping/hunting economy continues to play a major role in the native economy and its society, many have become involved in

the "modern wage economy" (which provides the bulk of their cash income). This involvement in the wage economy is linked to the urbanization of native peoples which began in 1950s and 1960s. Nevertheless, the traditional component of the mixed native economy remains very important, both as a source of food and as a key element in the native way of life. Consequently, it is not surprising that at the EARP hearings fear was expressed that the Norman Wells Project would damage the environment and thus harm the hunting and trapping economy (FEARO, pp. 38 and 44).

The native economy has two main components - trapping and harvesting. Trapping provides a cash income for many native families. Even though this cash income is often very small, it is very widespread, that is, most native households can count on some cash income from trapping.

Harvesting of country food in the traditional sense means living off the land. Today, country food provides native families living in settlements with much of their food and, in doing so, reduces their dependency on store food. Some, such as Kemp, Rushford and Schaefer, argue that country food both improves native nutrition and lowers their cost of living.

Since the trapping economy is associated with the harvesting of country food, families heavily engaged in trapping are probably producing the bulk of the fish and game. While non-trapping families also consume considerable country food, the trapping-oriented families provide the bulk of the country food, sharing some of it with relatives and friends.

Evidence of the strength of the trapping economy in the four communities is demonstrated by the GNWT records of trappers and fur sales. The aggregated figures for the four communities reveal that the number of trappers is much larger today than ten years ago. For example, in 1973/74, the GNWT recorded 149 trappers while in 1982/83, the figure was 197. Similarly, the value of fur sales increased from about $62,000 to $333,300 over the same period. On a per capita basis, the average value of fur sales in 1973/74 was $420, while in 1982/83 it was $1,700 (Report no. 6-84).

The GNWT statistics indicate that the number of active trappers at Norman Wells has declined from 4 in 1980/81 to zero in 1982/83 and total fur sales from $502 to zero. On the other hand, the DIAND household survey recorded 3 trappers in 1982 and 4 trappers in 1984. In 1984, only one household declared its fur sale revenue ($7000). Two households said they may return to trapping after the Norman Wells Project is completed.

The number of trappers has remained relatively constant at Fort Simpson, Fort Norman and Wrigley. There was a substantial decline in the value of fur sales (30% and 45%, respectively), from 1981/82 to 1982/83 at Fort Simpson and Wrigley. However, since there have been similar fluctuations in fur sales in the past, these figures do not indicate a permanent decline in the trapping industry. If, on the other hand, this decline continued for five or more years, it would mark a fundamental shift.

The results of the 1982 and 1984 household questionnaires reveal that the consumption of country food has remained constant at Norman Wells and Fort Norman. Since the 1984 DIAND survey did not include the communities of Fort Simpson and Wrigley, we can only speculate that the utilization of country food in these two communities was similar to that of Norman Wells and Fort Norman. If this is true, then the harvesting and utilization of country food does not appear to have been affected by the Norman Wells Project.

The stability of the consumption patterns of country food implies that access to these food resources on the land remained constant during the construction period of the Norman Wells Project. Since the harvest region for each community extends well beyond the narrow zone of pipeline construction, this finding does not preclude the possibility that there has been a change in the country food harvest from the construction zone. Since this study did not address itself to the environmental effects of the Norman Wells Project upon natural resources used by native people, it cannot comment on the possible effects, either short-term or long-term, upon country food or trapping.

Based on the results of the 1982 DIAND household questionnaire, differences in the consumption of country food by residents in the four communities were identified. At Norman Wells and Fort Simpson many people do not consume much food off the land while the opposite is true at Fort Norman and Wrigley. For example, if heavy users of country food are defined as persons whose diet consists of 60% or more of country food, then Fort Norman, with 49%, has the greatest percentage of households in this category. Wrigley has 33.3% of its households classified as heavy consumers of country food while Fort Simpson has 12.4% and Norman Wells 5.4%. On the other hand, if a person who consumes 15% or less country food is classified as a marginal user, then we find the greatest percentage of households in this category in Norman Wells (65.3%); followed by Fort Simpson at 51%, Wrigley at 28.6% and Fort Norman, 12.5%.

8. Perceptions About Development

After nearly three years of intense construction activity at Norman Wells, its residents have had more than sufficient exposure to judge this type of development. Therefore, their 1984 perceptions about this large-scale industrial development are based on direct experience. The DIAND household questionnaire recorded the feelings of respondents towards development in a series of questions in 1982 and 1984. For example, the percentage of Norman Wells residents favouring large-scale industrial developments increased from 45% in 1982 to 58% in 1984.

In response to the question, "do you favour increased economic development?", most residents in Norman Wells (80% in 1982 and 76% in 1984) support further development. Over the same time period, those opposed to further development increased their number from 11% to 16%. The remainder represents the "undecided". These figures suggest that the citizens of Norman Wells were slightly less supportive of additional development in 1984 than they were in 1982. In a future report, attitudes towards development by long-term residents and short-term residents, and by native and non-native Northerners for each community will be examined.

In 1982, responses by Norman Wells residents to a similar question, "is there a need for more jobs in your community?" revealed a large "undecided" opinion group. The largest group (45%), supported the notion that more jobs were needed. Two years later, 54% felt there was no longer a need for more jobs.

In the Norman Wells Project, joint venture developments represent a new form of native involvement. The federal government apparently saw these corporations as involving the native organizations in this mega-project in a direct way, thus ensuring a high rate of native employment, strengthening native business institutions and providing a model for future large-scale industrial developments. Shehtah Drilling is the first major joint venture between a major developer (Esso) and the two native organizations, the Dene Nation and the Métis Association of the NWT. Norman Wells residents have had the opportunity to watch the joint venture company in operation, as a result of which they are now more approving of the concept (69% in favour in 1984 compared to 53% in 1982).

Fort Norman, a native community near Norman Wells, has also felt the direct impact of the Norman Wells Project. For example, a work camp for the building of the pipeline was situated across the Bear River from the community of Fort Norman.

According to the 1982 and 1984 household questionnaire results, residents of Fort Norman favour further economic development. In 1982, 83% took this position, while in 1984 the figure had risen to 93%. Similarly, residents strongly support the need for more jobs - in 1982, 93% of the respondents agreed that there was a need for more jobs, while 97% felt this way in 1984. In 1982, 78% of Fort Norman residents supported the concept of joint ventures. By 1984, the strength of their support had increased to 90%. These responses indicate a strong desire for more employment and for local economic development. Significantly, the level of support for development at Fort Norman is much higher than at Norman Wells.

A report by the GNWT Fort Smith Area Directorate on the pipeline activity in that region in 1984 contains statements and evidence presented by citizens and organizations from the village of Fort Simpson which clearly indicate strong feelings of disappointment and dissatisfaction with the Norman Wells Project, its developers and certain government agencies (Green, 1984). In sharp contrast, the GNWT report for the Inuvik Area conveys a different message - that there were no serious adverse impacts at Norman Wells and Fort Norman (Greenall, 1984). In an even more positive vein, the RMC consultant's report on the four communities states that there was "...an almost complete absence, from the community perspective, of the very harmful socio-cultural impacts predicted by some analysts and feared by many community residents." (IPL, Socio-Economic Monitoring Report, Appendix A, "Community Perception Report", p. 5).

9. Perceived Positive and Negative Impacts on Local Communities

The responses to the March 1984 survey by 41 randomly selected residents of the four communities form the basis of this section. Each respondent was asked to state in order of importance any negative impacts of the Norman Wells Project and any positive impacts of this project. The 41 respondents made 395 statements, each describing, in their own words, a socio-economic impact generated by the Norman Wells Project on their community.

The sample is not sufficiently large for definitive comparisons to be drawn. However, the responses were classified into 28 classes - 16 negative impact classes and 12 positive impact classes. Two reports (Report 2-84 and 3-84) have examined this sample survey data in detail and some of the major findings are summarized below:

(1) sixty-five per cent of the statements made described "negative" socio-economic impacts. Of the total number of persons questioned in this special survey of 41 people, approximately 83% of the respondents (30 people) did not report a single positive effect of the Norman Wells Project on their community, while every respondent reported one or more negative impacts. The findings of this special survey indicate that there is a sizable minority that strongly opposes this construction project.

(2) the most often mentioned positive impact (11.6%) is "the provision of jobs, training and economic benefits from the Norman Wells Project". Generally, social benefits such as improved community services were mentioned much less frequently than economic benefits. An example of an improved community service is the new school at Norman Wells.

(3) the most frequently mentioned negative impact (12.2%)is "the need for more jobs and training from the Norman Wells Project", reflecting (a) that the number of jobs available to local residents is too small; and (b) that people are disappointed with the training programs which they believed would prepare northern peoples for many of the more skilled jobs.

These two complaints indicate serious doubts about the Norman Wells Project in the minds of many Northerners.

Other frequently mentioned negative factors were:

(a) too much traffic and noise;

(b) not enough business for local firms;

(c) too much alcohol consumption and crime; and

(d) too many southerners.

(4) Differences between native and non-native responses revealed that natives are most concerned about:

(a) the impact of the project on trapping;

(b) the boom-bust nature of this construction project; and

(c) "good wages".

Perhaps the most important difference between native and non-native respondents is that the non-native respondents felt that the Norman Wells Project had more positive effects upon their community than did native respondents. At the same time, only native residents identified long-term negative impacts of the Norman Wells Project upon their community and way of life. These differences are, in large measure, due to the dual nature of northern societies. For the native peoples, their society is significantly different from that of most Canadians and this difference is deeply rooted in native cultural values. Thus, this difference in cultural outlook is an indication of the vitality of the native societies and the commitment of native peoples to their distinct way of life.

CONCLUSION

By July 1984, the Norman Wells Oilfield Expansion and Pipeline Project was almost complete. During its construction, this mega-project has produced both jobs and business contracts in the four communities in the construction zone. Norman Wells itself appears to have come through the hectic construction phase without any serious social problems.

Community experience with the Norman Wells Project has varied significantly, with Norman Wells, Fort Norman and possibly Wrigley having a more positive relationship with the development than Fort Simpson.

Since the Norman Wells Project ends in 1985, a sharp decline in job opportunities and, therefore, in household income can be expected. This anticipated effect of the Norman Wells Project upon residents of the four communities, but particularly upon native workers and their families, may well represent its major adverse economic and social impact. While the emergence of native development corporations and new economic opportunities in the region, such as the extension of the highway from Fort Simpson to Norman Wells, and additional oil exploration work, may lessen the degree of the post-Norman Wells economic decline, a weakening of the regional economy seems inevitable. This raises two questions:

(1) who will generate a similar number of jobs to those associated with the Norman Wells Project; and

(2) which local firms will be able to compete in this more aggressive economic environment?

This latter question has strong implications for native development corporations and native employment outside of Norman Wells.

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APPENDIX 1

Statistical Tables Relating to the Figures and Text of Report 9-84

APPENDIX 1

TABLE 1

POPULATION CHANGE AT NORMAN WELLS

	1971	1976	1981	1984	Change (1971/84)
Total	300	367	420	630	
Change		67	53	210	330
% Change		23.3	14.4	50.0	210
Annual % Change		4.7	2.9	12.5	7.7

POPULATION CHANGE AT FORT NORMAN

	1971	1976	1981	1984	Change (1971/84)
Total	248	232	286	288	
Change		(16)*	54	2	40
% Change		(6.5)*	23.3	0.1	16.1
Annual % Change		(1.3)*	4.7	0.0	1.2

* Indicates a negative number.

Source: Census of Canada and DIAND 1984 survey.

TABLE 2

BIRTHPLACE OF MALE HEAD OF THE HOUSEHOLD, 1982/1984
(%)

Birth Place	Norman Wells		Fort Norman		Wrigley		Fort Simpson	
	1982	1984	1982	1984	1982	1984	1982	1984
N.W.T.	6	5	83	79	100	-	45	-
Rest of Canada	91	92	16	20	0	-	47	-
Other Countries	3	3	1	1	0	-	8	-
Total	100	100	100	100	100	-	100	-

Source: DIAND 1982 and 1984 surveys.

APPENDIX 1

TABLE 3

MEDIAN HOUSEHOLD INCOMES

Community	1982	1984	Difference
Norman Wells	$38,000	$44,000	$ 6,000
Fort Norman	21,000	35,500	14,500
Wrigley	8,000	-	
Fort Simpson	29,500	-	

Source: DIAND 1982 and 1984 surveys.

APPENDIX 1

TABLE 4

SPENDING PATTERNS 1982
(%)

	Norman Wells	Ft. Norman	Wrigley	Ft. Simpson
10% or less	37	4	0	2
11% to 25%	20	2	0	5
26% to 50%	20	4	0	17
51% to 75%	15	15	38	34
76% to 100%	8	75	62	43
TOTAL	100	100	100	100

SPENDING PATTERNS 1984
(%)

	Norman Wells	Ft. Norman	Wrigley	Ft. Simpson
10% or less	25	16	-	-
11% to 25%	26	0	-	-
26% to 50%	17	16	-	-
51% to 75%	16	28	-	-
76% to 100%	16	40	-	-
Total	100	100	-	-

Source: DIAND 1982 and 1984 surveys.

APPENDIX 1

TABLE 5

SHOPPING EXPENDITURE PATTERNS

	% of Population	Spent on Average %	In
Fort Simpson	55	14	Hay River
	52	17	Edmonton
	45	12	Regina
	37	8	Yellowknife
Norman Wells	81	42	Edmonton
	73	22	Yellowknife
	25	27	Hay River
	21	7	Inuvik
	16	6	Fort Norman
Fort Norman	60	13	Norman Wells
	27	8	Yellowknife
	19	6	Inuvik
	10	16	Edmonton
Wrigley	86	13	Fort Simpson
	43	9	Fort Norman
	33	7	Yellowknife

Source: Report 7-84, p. 20.

APPENDIX 1

TABLE 6

COUNTRY FOOD CONSUMPTION, 1982
(% of households)

Category	Norman Wells	Ft. Norman	Wrigley	Ft. Simpson
15% or less	65.3	12.5	28.6	51.0
16% to 39%	21.3	16.7	9.5	22.6
40% to 60%	8.0	20.8	28.6	14.0
over 60%	5.4	49.0	33.3	12.4
TOTAL	100.0	100.0	100.0	100.0

COUNTRY FOOD CONSUMPTION, 1984
(% of households)

Category	Norman Wells	Ft. Norman	Wrigley	Ft. Simpson
15% or less	66.7	17.2	-	-
16% to 39%	18.3	13.8	-	-
40% to 60%	7.5	24.2	-	-
over 60%	7.5	45.8	-	-
TOTAL	100.0	100.0	-	-

Source: DIAND 1982 and 1984 Surveys.

APPENDIX 2

Statistical Tables Selected
From Report 4-83

APPENDIX 2

TABLE 1

COMMUNITY POPULATIONS BY MAJOR COHORTS, AGE GROUPS, JUNE 1982*
(%)

Life Phase	Age Cohort	Norman Wells	Fort Norman	Wrigley	Fort Simpson
Pre-School	0 to 5	12.6	14.0	9.6	12.4
School	6 to 14	16.2	20.7	17.3	17.3
Young Worker	15 to 30	35.6	32.2	34.6	36.2
Mature Worker	31 to 64	35.6	26.1	27.0	30.9
Senior Citizen	65 and older	0.0	7.0	11.5	3.2
Total		100.0	100.0	100.0	100.0
Population Size		191	259	104	722

* These population figures do not include persons who have resided in the community for less than a year.

Source: Report 4-83, p. 17.

TABLE 2

THE HOME COMMUNITY OF COMMUTERS TO NORMAN WELLS, JUNE 1982*

Home Community	Number	%
Edmonton	129	27.9
Yellowknife	71	15.4
Fort Simpson	33	7.1
Inuvik	31	6.7
Fort Good Hope	29	6.3
Whitehorse	28	6.1
Fort Norman	27	5.8
Hay River	26	5.6
Fort Smith	26	5.6
Other Northwest Territories centers	38	13.1
Other Provincial centers	2	0.4
Total	440	100.0

* This list of commuters was derived from the business questionnaire. It includes all persons who commuted to Norman Wells over the past 12 months (July 1981 - June 1982).

Source: Report 4-83, P. 19.

APPENDIX 2

TABLE 3

BIRTHPLACE, JUNE 1982
(%)

Birth Place	Norman Wells	Fort Norman	Wrigley	Fort Simpson
N.W.T.	18.3	80.3	99.0	65.4
Rest of Canada	76.5	5.8	1.0	41.2
Foreign Country	5.2	0.4	0.0	4.2
Missing	0.0	13.5	0.0	2.4
Total	100.0	100.0	100.0	100.0
Population	191	259	104	722

Source: Report 4-83, p. 20.

TABLE 4

EMPLOYMENT PATTERN OF THOSE 15-64 YEARS OF AGE, JUNE 1982
(%)

Employment	Norman Wells	Fort Norman	Wrigley	Fort Simpson
Full Time	57.6	19.3	13.5	31.1
Part Time	6.3	13.2	21.2	15.2
Unemployed	0.0	11.6	12.5	10.3
Labour Force	63.9	43.1	47.2	56.6
Non Labour Force	36.1	56.9	52.8	43.4
Total	100.0	100.0	100.0	100.0

Source: Report 4-83, p. 21.

APPENDIX 3

Descriptive Statistics From
The Community Businesses Survey
(Report 8-84)

APPENDIX 3

TABLE 1

INDUSTRIAL COMPOSITION 1982/83, Fort Simpson

Description	1982 # of Firms	1982 Total Employees	1982 Weighted Score	1983 # of Firms	1983 Total Employees	1983 Weighted Score
Agricultural				3	4	207.00
Fishing and Trapping	2	9	116.60	2	36	103.50
Food Industries				1	1	207.00
Wood Industries	1	6	175.00	1	8	207.00
Building Contracting	8	19	73.68	8	30	75.20
Trade Contracting	3	5	105.00	6	11	124.20
Transportation	17	73	90.10	18	65	100.62
Pipeline Transport				1	1	207.00
Communications	2	6	87.50	2	6	69.00
Utility	1	6	43.75	1	6	51.75
Petroleum Wholesale	1	3	175.00	1	2	207.00
Food Beverage Wholesale				1	2	207.00
Food Beverage Retail	2	11	87.50	2	11	103.50
Household Furniture	1	1	87.50			
Auto Parts Sales Service	1	2	58.30	1	3	69.00
General Retail	1	22	58.30	1	17	69.00
Other Retail	3	9	105.00	2	11	138.00
Bank	1	8	87.50	1	7	103.50
Real Estate Sales	1	1	87.50	1	1	103.50
Business Service	3	25	105.00	3	17	69.00
Federal Government	6	69	95.40	6	64	112.86
Territorial Government	6	41	95.40	6	53	103.50
Local Government	3	52	26.92	4	45	92.00
Education	2	46	70.00	2	45	59.14
Health Social Services	4	37	87.48	4	31	92.00
Food Beverage Service	3	16	175.00	3	16	155.25
Accommodation	1	10	58.30	1	11	23.00
Amusement Recreation	1	1	175.00	2	2	207.00
Personal Household Service	1	1	175.00	2	2	207.00
Membership Organization	3	8	131.25	3	9	103.50
Other Service	9	18	157.50	8	15	138.00
Total	87	505		97	532	
	Functional Index:		2790.38	Functional Index:		3715.02

Source: Report 8-84, p.6.

APPENDIX 3

TABLE 2

INDUSTRIAL COMPOSITION 1982/83, Norman Wells*

Description	1982 # of Firms	1982 Total Employees	1982 Weighted Score	1983 # of Firms	1983 Total Employees	1983 Weighted Score
Logging	1	2	175.00	1	2	207.00
Petroleum Crude	1	162	175.00	1	287	207.00
Mineral Service	4	8	175.00	4	45	207.00
Building Contracting	9	69	82.89	12	314	112.80
Heavy Construction	2	7	175.00	4	123	207.00
Trade Contracting	2	29	70.00	4	23	82.80
Transportation	12	89	63.60	16	110	89.40
Communications	1	2	43.75	2	6	69.00
Utility	1	8	43.75	1	7	51.75
Food Beverage Wholesale	1	1	175.00			
Food Beverage Retail	2	4	87.50	2	4	103.50
Furniture Retail	1	1	87.50			
Auto Parts Sales Service	1	5	58.30	1	14	69.00
Other Retail Stores	2	3	70.00	1	3	69.00
Bank	1	4	87.50	1	7	103.50
Business Service	2	9	70.00	6	51	138.00
Federal Government	2	22	31.80	2	22	37.62
Territorial Government	3	10	47.70	4	14	69.00
Local Government	4	15	53.84	4	18	92.00
Education	1	6	35.00	1	13	29.57
Health Social Services	1	4	21.87	2	5	46.00
Accommodation	1	70	58.30	6	163	138.00
Food Beverage Service				1	6	51.75
Personal Household Service				1	3	103.50
Membership Organization				1	1	34.50
Other Service	1	2	17.50	3	33	51.75
Unknown					7	
Total	56	532		81	1281	
	Functional Index:		1905.80	Functional Index:		2370.48

* Includes rotational workers and southern firms working at Norman Wells.

Source: Report 8-84, p. 8.

APPENDIX 3

TABLE 3

INDUSTRIAL COMPOSITION 1982/83, FORT NORMAN

Description	1982 # of Firms	1982 Total Employees	1982 Weighted Score	1983 # of Firms	1983 Total Employees	1983 Weighted Score
Fishing and Trapping	1	8	58.30	1	9	51.75
Building Contracting	2	10	18.42	4	12	37.60
Transportation	3	6	15.90	2	4	11.18
Communications	1	1	43.75	2	2	68.40
Utility	1	1	43.75	1	1	57.75
General Retail	1	6	58.30	1	7	69.00
Real Estate Sales	1	3	87.50	1	3	103.50
Federal Government	2	10	31.80	2	11	37.62
Territorial Government	2	5	31.80	2	5	34.50
Local Government	4	21	53.84	3	19	69.00
Education	1	6	35.00	3	12	88.71
Health Social Services	2	8	43.74	2	5	46.00
Accommodation	1	2	58.30	2	4	46.00
Membership Organization	1	5	43.75	2	4	69.00
Other Service				1	1	17.25
Total	23	92		29	99	
	Functional Index:		624.15	Functional Index:		801.26

Source: Report 8-84, p. 9.

APPENDIX 3

TABLE 4

INDUSTRIAL COMPOSITION 1982/83, WRIGLEY

Description	1982 # of Firms	1982 Total Employees	1982 Weighted Score	1983 # of Firms	1983 Total Employees	1983 Weighted Score
Fishing and Trapping	1	14	58.30	1	10	51.75
Transportation	1	2	5.30	1	2	5.59
Utility	1	1	43.75	1	1	51.75
Auto Parts Sales Service	1	2	58.30	1	2	69.00
General Retail	1	6	58.30	1	7	69.00
Federal Government	1	6	15.90	1	7	18.81
Local Government	2	22	13.46	2	9	23.00
Education	1	4	35.00	1	4	29.57
Health Social Services	1	3	21.87	1	2	23.00
Total	10	60		10	44	
	Functional Index:		310.18	Functional Index:		341.47

Source: Report 8-84, p. 10.

APPENDIX 4

Descriptive Tables From the 1984 Reports 2-84 and 3-84 on Impact Perceptions

APPENDIX 4

TABLE 1

DETAILED LIST OF PROJECT IMPACTS*

1. need more jobs, training -- includes more jobs for natives, more jobs for northerners, need more non-union jobs, more training programs, only hired token northerners, unions wouldn't hire northerners, discrepancy between actual and stated hiring practices.

2. provided jobs, training -- includes provided jobs for natives, jobs for young people, training programs for natives, economic benefits.

3. not enough businesses, long term benefits -- includes not enough business brought to the communities, promises re. contracting work weren't kept, no long term benefits to economy of the communities.

4. other negative effects -- includes jobs too difficult, money earned as wages not being spent on family, contracts should go through co-op rather than band, fosters negative attitude towards large development projects.

5. too much alcohol, crime -- includes too much alcohol at the camps, drugs and alcohol too readily available, vandalism, no control over liquor in camps, too much gambling at camp.

6. too much traffic, noise -- includes too many vehicles in town, danger to children on roads, too much noise from trucks running overnight, too much traffic through town at night, hazardous vehicles.

7. environmental concerns -- includes concern about water quality once pipeline construction occurs in Great Bear River, concern over pipeline spills, damage along right of ways, artificial islands affect natural river breakup.

8. other positive effects -- includes better government economic aid programs for northerners; northern awareness, i.e., southerners know we're up here; project was well organized; good information provided.

APPENDIX 4

TABLE 2

FREQUENCY OF RANKING FOR POSITIVE PROJECT IMPACTS

		Rank						
		1	2	3	4	5	Total	
	Positive Impacts							
1.	provided jobs, training, economic benefits	21	4	1	3		29	100%
2.	other positive impacts	1	5	3	3	1	13	45%
3.	increased business	1	9	2			12	41%
4.	good wages, improved standard	2	3	3	2		10	34%
5.	increased access, cheaper goods	1		5		3	9	31%
6.	no change in liquor consumption, crime	1	1	1	1	2	6	21%
7.	no effect on hunters, trappers		3	1	1	1	6	21%
8.	improved services		1	2	1	1	5	17%
9.	no impact on town, services	1		2	1	1	5	17%
10.	encourages long term development	1	2		1		4	14%
11.	sponsorship of community events		1	1	1		3	10%
12.	need more jobs, training			1			1	3%
	Total	29	29	22	14	9	103	

n = 29, 71% of total sample (41)

Source: Report 3-84, p. 7.

APPENDIX 4

Table 1 (continued)

Detailed List of Project Impacts

9. increased business - includes more local business, provides experience for local contractors and businesses, provides small businesses with expertise for future.

10. too many southerners, transients -- includes too many southerners encouraged to commute and they leave nothing in the community, no spending here; greater transient population.

11. project duration too short -- includes project could have been spread out longer, jobs were too short, should have been expanded over 3 to 4 years rather than 2 to give more businesses a chance to set up.

12. good wages, improved standard of living -- includes better standard of living, self-respect provided when earning good money.

13. increased access, cheaper goods -- includes better transportation systems, new road, greater transportation frequency, Esso improved road, winter road access, more flights available.

14. services overused -- includes schools, banks, health services overused, recreation facilities overused.

15. not enough information - includes not enough information provided regarding jobs, the project, union operations provided to the public, not enough public relations.

16. negative effect on hunting, trapping — includes disturbance along trapline hurts trappers; right of way will interfere with hunting trails.

17. boom and bust, social stress -- includes ruined community feeling, too much commotion, preoccupation with money, during construction residents felt like outsiders.

18. price inflation — includes higher costs due to greater demand, costs of rent and food have risen, costs in town are very high, once exploration started prices started going up.

19. no change in liquor consumption, crime -- includes drinking was less than what had been expected, same amount of booze and drugs as before project began, haven't noticed any increase in crime.

20. racial tension -- includes racial discrimination, anti-white sentiment, natives given the dirtiest jobs.

21. improved services -- incudes more facilities, some money spent on community projects, better coverage of social services, better government services.

22. encourages long term development -- includes provided some sense of long term security and permanence, encouraging other businesses to move in, town will eventually grow with the pipeline going through.

23. no impact on towns, services -- includes anticipated negative community impact did not materialize, segregation of camps worked well, no identifiable problem with transients.

24. no effect on hunters, trappers -- includes pipeline won't affect trapping as after some period of time no one will know a pipeline is there, realize that IPL had no effect on traplines or hunting.

25. costs incompatible with local businesses -- includes local businesses can't afford to pay same wages as the big companies, therefore they can't compete, high wages are inflating peoples' idea of what they are worth, heavy staff turnover, too much capital outlay for small contracts to get into something.

26. native way of life disrupted -- includes project is hindering the native way of life as the animals and fish are moving away; money spent on alcohol and retreat from native lifestyle occurs; many native people moving away from traditional lifestyle.

27. sponsorship of community events -- includes curling rink donated by big businesses, they supported merchants' bonspiel.

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*In this list, the 395 descriptive statements from 41 randomly selected residents are classified into 27 socio-economic impacts. This survey took place in March 1984 and included all four communities.

Source: Report 2-84, pp. 7-9.

APPENDIX 4

TABLE 3

FREQUENCY OF RANKING FOR NEGATIVE PROJECT IMPACTS

		Rank						
		1	2	3	4	5	Total	
1.	need more jobs, training	9	12	2	2	2	27	68%
2.	too much traffic, noise	4	3	1	6	4	18	45%
3.	not enough business, long term benefits	4	2	5	4	1	16	40%
4.	too much alcohol, crime	3	4	6	1	1	15	38%
5.	too many southerners, transients	2	2	5	4	2	15	38%
6.	other negative impacts	6	2	2	1	3	14	35%
7.	boom and bust, social stress	1	3		2	4	10	25%
8.	services overused	1	2	4	2		9	23%
9.	environmental concerns	4	1	2	2		9	23%
10.	project duration too short		2	1	2	3	8	20%
11.	negative effect on hunting, trapping	4	1		1	2	8	20%
12.	not enough information			4	2		6	15%
13.	price inflation	1	2			2	5	13%
14.	cost-price distortions	1	2	2			5	13%
15.	racial tension		1		1	1	3	8%
16.	native way of life disrupted		1	1			2	5%
	Total	40	40	35	30	25	170	

n= 40, 98% of sample

Source: Report 3-84, p. 16.

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